CLAIMS

What is claimed is:

1. A method for shifting blood glucose level in an individual from a starting value to a target value, said method comprising the steps of:

calculating a required amount of carbohydrate to ingest to produce said shift according to a formula, said formula comprising:

$$CHO = \frac{TARGET - STARTING}{X},$$

where CHO represents said required amount of carbohydrate, and wherein X comprises an index representing said individual's sensitivity to carbohydrate;

ingesting said first required amount of carbohydrate by said individual; and

observing an actual shift in blood glucose value caused by ingesting said required amount of carbohydrate.

2. The method of Claim 2, wherein said individual is a human subject.

3. The method of Claim 2, wherein said carbohydrate to ingest is any of:

liquid food;

solid food; and

liquid and solid food.

4. The method of Claim 2, wherein X comprises a generalized value.

5. The method of Claim 4, wherein said generalized value is from the range of approximately 1 to 3.

6. The method of Claim 4, wherein said blood glucose shift comprises a glucose excursion.

7. The method of Claim 6, wherein said required amount of carbohydrate to produce a predetermined glucose excursion is calculated based on said exemplary value of X.

8. The method of Claim 7, further comprising the step of

individualizingsaid value of X to said individual based on an actual glucose excursion resulting when said individual ingests said required amount of carbohydrate according to:

$$X_i = \frac{OBSERVED - STARTING}{CHO},$$

where 'Observed' represents an actual blood glucose value achieved following said ingestion of said first calculated amount of carbohydrate, and X_i represents said individualized value of X.

9. The method of Claim 8, further comprising the step of:

calculating a second required amount of carbohydrate using said individualized value of X, wherein said second required amount comprises the amount of carbohydrate required to be ingested by said individual to effect said target glucose excursion.

10. The method of Claim 9, further comprising the step of:

ingesting said second required amount of carbohydrate by said individual.

11. The method of Claim 9, further comprising the step of:

achieving and maintaining an optimal glycemic profile based on said formula and said individualized value of X.

12. The method of Claim 10, further comprising the step of:

generating an individualized calibration model for said individual for use in non-invasive methods of blood glucose determination employing spectroscopic instrumentation based on idealized anti-correlated glycemic profiles produced using said formula.

13. The method of Claim 2, further comprising the step of:

using exogenous insulin to assist shifts between blood glucose levels.

14. A method of dietary management of an individual's glycemic profile, wherein an optimal glycemic profile is achieved and maintained, said method comprising the steps of:

calculating a required amount of carbohydrate to ingest to shift blood glucose level in said individual according to a formula, said formula comprising:

$$CHO = \frac{TARGET - STARTING}{X},$$

where 'Target' represents said target value, 'Starting' represents said first value and CHO represents said required amount of carbohydrate, and wherein X represents a generalized index value representing said individual's sensitivity to carbohydrate;

ingesting said required amount of carbohydrate by said individual;

observing the actual shift in blood glucose value caused by ingesting required amount of carbohydrate;

generating a value of X individualized to said individual; and

achieving and maintaining an optimal glycemic profile based on said formula and said individualized value of X.

15. The method of Claim 14, wherein said individual is human.

16. The method of Claim 14, wherein said carbohydrate to ingest is any of:

liquid food;

solid food; and

liquid and solid food combined.

17. The method of Claim 14, wherein said generalized value of X is from a range of approximately 1 to 3.

18. The method of Claim 17, wherein said blood glucose level shift comprises a glucose excursion.

19. The method of Claim 18, wherein said required amount of carbohydrate to effect a predetermined glucose excursion is calculated based on said exemplary value of X.

20. The method of Claim 19, wherein said generating step comprises:

individualizing X to said individual, based on an actual glucose excursion resulting when said individual ingests said first calculated amount of carbohydrate, according to:

$$X_i = \frac{OBSERVED - STARTING}{CHO},$$

where 'Observed' represents an actual blood glucose value achieved following said ingestion of said first calculated amount of carbohydrate and X_i represents said individualized value of X.

21. The method of Claim 20, wherein said achieving and maintaining step comprises the steps of:

calculating a second required amount of carbohydrate to ingest to achieve and maintain said optimal glycemic profile based on said formula and said individualized value of X; and

ingesting said second required amount in divided portions over a predetermined time span.

22. The method of Claim 14, further comprising the step of:

using exogenous insulin to assist in achieving and maintaining said optimal glycemic profile.

23. The method of Claim 14, further comprising the step of:

generating an individualized calibration model for said individual for use in non-invasive methods of blood glucose determination employing spectroscopic instrumentation based on idealized anti-correlated glycemic profiles produced using said formula.

24. A method of predicting a required amount of carbohydrate to ingest to shift blood glucose level in an individual from a starting value to a target value, said method comprising the steps of:

providing said target value and said starting value;

calculating a difference between said values; and

calculating said required amount of carbohydrate by dividing said difference by a numerical index representative of said individual's sensitivity to carbohydrate according to:

$$CHO = \frac{TARGET - STARTING}{X},$$

wherein CHO represents said required amount and X represents said numerical index.

25. The method of Claim 24, wherein said individual is a human subject.

26. The formula of Claim 24, wherein said carbohydrate to ingest is any of:

liquid food;

solid food; and

liquid and solid food combined.

27. The method of Claim 24, wherein X comprises a generalized value.

28. The method of Claim 27, wherein said generalized value is from the range of:

approximately 1 to 3.

29. The method of Claim 27, wherein said blood glucose level shift comprises a glucose excursion.

30. The method of Claim 29, wherein said required amount of carbohydrate to produce a predicted glucose excursion is calculated based on said generalized value of X.

31. The method of Claim 30, wherein said value of X is individualized based on an actual glucose excursion resulting when said individual ingests said first calculated amount of carbohydrate according to:

$$X_I = \frac{OBSERVED - STARTING}{CHO},$$

where 'Observed' represents an actual blood glucose value achieved following said ingestion of said required amount of carbohydrate and X_I represents said individualized value of X.

32. The method of Claim 31, further comprising the step of achieving and maintaining an optimal glycemic profile based on said individualized value of X.

33. The method of Claim 31, further comprising the step of producing idealized, anti-correlated glycemic profiles in an individual based on said formula and said individualized value of X, so that individualized calibration

models may be generated for use in non-invasive methods of blood glucose determination employing spectroscopic instrumentation.

34. The method of Claim 24, wherein shifts between glucose levels are assisted by the administration of exogenous insulin.